

6. Contributions to the Anatomy of Passerine Birds.—Part V.¹ On the Structure of the Genus *Orthonyx*. By W. A. FORBES, B.A., Prosector to the Society.

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The position in the series of *Passeres* of the genus *Orthonyx* has for many years been a moot point with ornithologists, Johannes Müller having long ago² surmised that these birds might be tracheophones, and so connected with the Neotropical Dendrocolaptidæ. Some recent writers (*e. g.* G. R. Gray, Bonaparte, and Salvadori) have placed them in, or in the neighbourhood of, the Menuridæ; Sundevall, on the other hand³, assigns them a position amongst his Cichlomorphæ Brevipennes.

Up to the present time the formation of their soft parts, and particularly of the syrinx, has remained unknown—a deficiency in our knowledge I am now able to supply by my dissection of both the Australian and New-Zealand forms. For my specimens of the former (*Orthonyx spinicauda*) I am indebted to the kindness of Mr. E. P. Ramsay, of the Australian Museum; for a pair of the latter (*O. ochrocephala*) to that of my friend Prof. Jeffery Parker, of the University of Otago.

Both forms are typical Singing-birds ("Oscines Normales"), with a well-developed Oscinine syrinx with its normal complement of *four* pairs of muscles. Of these the *short* anterior muscle runs to the anterior end of the third bronchial semiring alone in *O. spinicauda*; whilst in *O. ochrocephala* this ring receives its muscular supply from a fasciculus of the *long* anterior muscle. They thus differ essentially from *Menura*, with which they have been associated, that bird having but *three* pairs of muscles, peculiarly arranged⁴.

In this, as in all other points examined—with one exception in the case of *Orthonyx spinicauda*—these birds quite resemble the normal *Passeres*, as they do in having the bilaminate tarsus and reduced "first" (tenth) primary nearly always associated with the normal Acromyodian syrinx. *Orthonyx spinicauda*, however, has a peculiarity quite unknown to me in any other bird, inasmuch as its carotid artery, the left alone of these vessels (as in all *Passeres*) being developed, is not contained anywhere in the subvertebral canal, but *runs up superficially in company with the left vagus nerve* to near the head, where it bifurcates in the usual manner. This is just the same arrangement as that which occurs in many of the Parrots—all those in fact included in Garrod's "*Psittacidæ*,"⁵—save that in them the right carotid artery as well is present, running as usual in the hypapophysial canal.

¹ For Part IV. see P. Z. S. 1881, p. 435.

² In 1848. Vide 'Vocal Organs of Passeres,' Garrod's edition, p. 36.

³ 'Tentamen,' pp. 9 & 11.

⁴ Garrod, Coll. Papers, pp. 362-364.

⁵ Coll. Papers, p. 255.

In *Orthonyx ochrocephala* the left carotid retains its normal situation, though the point of entrance into the canal is somewhat higher up than is usual in other Passeres.

Examination of my spirit-specimens of these two birds has convinced me that the two forms are not really congeneric, the New-Zealand bird (*O. ochrocephala*) differing from the Australian in its more slender bill, less development of the nasal operculum, less spiny tail, and more slender claws. The coloration of the two forms is quite unlike; whilst internally the skull and syrinx exhibit differences, slight in amount, but greater than those usually found in birds of the same genus. Under these circumstances it seems that *Clitonyx* of Reichenbach¹ will be the correct generic term for the New-Zealand birds, as Lesson's name *Mohoua*, though of prior application², is not only barbarous but, what is more important, liable to be confounded with *Mohoa*, also a genus of Passeres from the Pacific Subregion.

In the present unsatisfactory condition of the systematic grouping of the Oscinine Passeres, it is impossible for me to point out clearly any definite position either for *Orthonyx* or *Clitonyx*, though both forms might, I apprehend, be safely placed in Mr. Sharpe's somewhat vaguely-defined "Timeliidæ."

The determination of the not-intimate relation of *Orthonyx* to *Clitonyx* is a point of some importance, from its bearing on the question of the general relationships of the fauna of New Zealand to that of Australia, *Orthonyx* having been sometimes mentioned as one of the few peculiar Australian genera of birds also represented in the satellite island³.

I may take this opportunity of stating that I have, in the course of the last few months, been enabled to examine examples of several genera of Passeres the condition of the syrinx in which has not before, I believe, been recorded. These include, of Old-World forms, *Rimotor*, *Ptenædus*, *Sphenura*, *Sphenostoma*, *Climacteris*, *Creadion*, *Miro*, *Certhiparus*, *Petræca*, *Entomyza*, *Pomarea*, *Phæornis*, *Falcunculus*, *Nesocichla*, *Nesospiza*, *Cracticus*; and of American forms, *Chamæa*, *Dulus*, *Phainopepla*, *Ptilogonys*. In all these genera the syrinx is perfectly Oscinine, as indeed was to be expected from the external structure of the birds. Johannes Müller at first placed *Ptilogonys* amongst the Tyrannidæ⁴, misled by the slightly aberrant structure of its tarsus, but on subsequently examining the nearly allied *Myiadestes*, and ascertaining its Oscinine nature, concluded that *Ptilogonys* too would, on examination, be found to have the muscular organs of voice⁵, a surmise the correctness of which is now demonstrated. *Petræca* has been stated by Prof. Parker⁶ to be a "Tra-

¹ Handb. Spec. Ornith. p. 167 (1851).

² Hist. Natur. Oiseaux, iii. p. 139 (1837).

³ Wallace, 'Geogr. Distribution of Animals,' i. p. 451; but see also 'Island Life,' p. 453, footnote.

⁴ Vocal Organs of Passeres, Garrod's ed. p. 41.

⁵ L. c. p. 61.

⁶ Trans. Z. S. ix. p. 336.

cherphone" (*i. e.* Mesomyodian), having "the muscles of lower larynx quite indistinct." In three specimens, however, of that genus examined by me I find a perfectly Oscinine syrinx with its muscles as well developed as in other birds of the same size. Whether the statement made by that author to the same effect about *Sittella* is accurate still remains to be seen.

June 20, 1882.

Prof. Flower, LL.D., F.R.S., President, in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of May 1882 :—

The total number of registered additions to the Society's Menagerie during the month of May was 159, of which 11 were by birth, 71 by presentation, 69 by purchase, 4 were received on deposit, and 4 by exchange. The total number of departures during the same period, by death and removals, was 102.

The most noticeable additions during the month of May were as follows :—

1. Four Pygmy Hogs, *Porcula salvania*, Hodgson (one male and three females), purchased May 15th of Mr. B. H. Carew, who has kindly furnished me with the following notes on this rare and interesting animal :—

"The Pygmy Hog is indigenous to the Western Doora of Bhootan, where the few that are found live in the thickest grassy jungles, and are only now and then seen in the daytime when the jungle is burnt. The natives do not attempt to catch them when netting deer and pigs, on account of their size, as being so small they always escape through the meshes of the nets which are used for the capture of the larger animals. There are but few natives who know of the existence of these animals at all; and some of those who know them say they are very pugnacious and plucky, and are able in fighting to defeat the wild boar; but I should doubt the truth of this story.

"The tracks of the Pygmy Hog are often found in the rice-crops (of the aborigines of the Doora) which are cultivated in patches in the middle of the jungle. The animals come out of the jungle at night, and root up the paddy-crops like the wild boar. I believe they live on the same food as the wild boar. I used to feed my specimens when caged in India on ripe plantains and paddy. I had a separate partition made in the cage; and I filled it with straw, as I found they required warmth. I found afterwards that from the rice-straw they all got a sort of mange or itch; so I had them rubbed well with sulphur and oil and changed the straw for dry grass.

"When in India I sold a pair of these animals to the Cooch Behar Maharajah for a fancy price; and he presented them to the Zoological Gardens in Calcutta. But on going to see them when I was in Calcutta, I was sorry to learn that they had both died. They had given me no trouble to keep as long as they were well and regularly



PORCULA SALVANIA.



fed; and after the knocking about those which I have sold to this Society havestood, these animals must be called any thing but delicate.

"There is great difficulty in catching the Pygmy Hog. Some five years ago a young one was secured by a Mr. Fischer, who tamed it; but it afterwards escaped. I have heard of no other individual being possessed by any one but myself.

"The Calcutta Zoological Society were trying for years to obtain a pair, but were unsuccessful in getting a single example until those which they received from the Maharajah of Cooch Behar through me (as already mentioned) reached them.

"It has taken me about four years to get the four now procured. They were caught in snares, which were set in hundreds all over the country throughout a range of about twenty miles. If you require more I may be able to get some when I return to India in about two months' time."

Mr. Selater exhibited a drawing of this animal by Mr. Smit (Plate XXXVII.), and remarked that Mr. Carew's four specimens were apparently in excellent health, and fed well on boiled vegetables, rice, potatoes, and other food usual for such animals. On measuring the largest and the smallest, the length of the body had been found in the one case to be 17 inches and in the other 14 inches. The weight of the largest animals had been ascertained to be about 10½ lb., and of the smallest 9¼ lb. Alluding to the rarity of the animal, Sir Joseph Fayrer had stated that during the many years in which he had hunted in the Terai he had never succeeded in obtaining a single specimen.

2. A Mediterranean Seal (*Monachus albiventer*), presented by M. Yeates Brown, Esq., H.B.M. Consul at Genoa, May 18th. This Seal, the first example of the species that had been received at the Gardens, had unfortunately not long survived its arrival.

3. Two male Argus Pheasants (*Argus giganteus*), presented to the Society by Major M'Nair, C.M.G., and J. M. Vermont, Esq., May 18th. This arrival was especially acceptable, as we had previously only two unmated females of this magnificent bird in the Collection.

4. A Koala (*Phascolarctos cinereus*), purchased May 23.

It is of great interest to receive a second example of this delicate animal, the only former specimen of which lived about fourteen months in the Society's Menagerie (see P. Z. S. 1880, p. 355, and 1881, p. 180), and to be able to announce that it seems likely to thrive. It feeds itself on the leaves of a large gum-tree (*Eucalyptus globulus*) which has been introduced into its cage, and also eats a little bread and milk.

5. A Jackass Penguin (*Spheniscus magellanicus*) from the Falkland Islands, purchased May 25. This is an adult bird in fine plumage, and is the first example of this species of Penguin that we have as yet received.

6. A fine pair of Great Ant-eaters, *Myrmecophaga jubata*, purchased May 31.